NON-PUBLIC?: N
ACCESSION #: 9211300098
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Joseph M. Farley Nuclear Plant - Unit 2 PAGE: 1 OF 4

DOCKET NUMBER: 05000364

TITLE: Reactor Manually Tripped Due to Low Levels in all Steam Generators
EVENT DATE: 10/20/92 LER #: 92-010-00 REPORT DATE: 11/19/92

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 065

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: R. D. Hill, General Manager - TELEPHONE: (205) 899-5156
Nuclear Plant

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

At 0023 on 10-20-92, while operating at 65 percent power, the Unit 2 reactor was manually tripped due to reduced feedwater flow causing low levels in all steam generators (SG). The reduced feedwater flow was caused by a loss of condensate pump net positive suction head, The loss of condensate pump net positive suction head was caused by the inadvertent isolation of one section of condenser cooling water in conjunction with the intentional isolation of one section of condenser cooling water. The loss of cooling caused hotwell temperature to increase resulting in saturation and loss of level. This caused the condensate pumps to lose suction, resulting in a loss of steam generator feedwater pump (SGFP) suction pressure which, in turn, led to reduced feedwater flow to all SGs.

An FNP investigation has concluded that the cause of this event is personnel error in that Operations personnel inadvertently operated the local control switch and closed the AB waterbox outlet cooling water motor

operated valve (MOV) during waterbox venting and seating of the outlet cooling water MOV for the AA waterbox. Troubleshooting was performed on the AB waterbox isolation MOV to determine if the valve had closed spuriously. No problems were identified that would support that conclusion.

To prevent recurrence, condenser inlet and outlet cooling water MOVs will normally be deenergized during power operations. As a further enhancement condenser waterbox push button control station labeling will be upgraded and procedure FNP-1/2-SOP-26.0 will be revised to verify flow to all waterboxes prior to isolating one waterbox for testing/maintenance.

END OF ABSTRACT

Plant and System Identification

Westinghouse - Pressurized Water Reactor
Energy Industry Identification System codes are identified in the text as XX!

Summary of Event

At 0023 on 10-20-92, while operating at 65 percent power, the Unit 2 reactor was manually tripped due to reduced feedwater flow leading to low levels in all steam generators (SG). The reduced feedwater flow was caused by a loss of condensate pump net positive suction head. The loss of condensate pump net positive suction head was caused by the inadvertent isolation of one section of condenser cooling water KE! in conjunction with the intentional isolation of one section of condenser cooling water. The loss of cooling caused hotwell temperature to increase resulting in saturation and loss of level. This caused the condensate pumps to lose suction resulting in a loss of steam generator feedwater pump (SGFP) suction pressure which, in turn, led to reduced feedwater flow to all SGs.

Description of Event

On 10-19-92, Unit 2 had been ramped to 65 percent power in preparation for leak detection testing of cooling water tubes in section AA of the main condenser. FNP has two condensers for each unit, A and B. Each condenser has two sections, AA and AB, and BA and BB. At 2355 on 10-19-92, operations personnel were directed to isolate, tag and drain the AA section of the condenser cooling water per FNP-2-SOP-26.0. The inlet and outlet cooling water MOVs to the AA condenser waterbox were closed using the local push button stations. Approximately 30 minutes from the initial closing

of the MOVs to the AA condenser waterbox, the outlet cooling water MOV for the AB waterbox was inadvertently closed by Operations personnel in the area. This resulted in a total loss of cooling to the A main condenser. The loss of cooling caused hotwell temperature to increase resulting in saturation and loss of level. The first alarm received in the control room was the hotwell low level alarm at a hotwell level of approximately 1.5 feet. The second alarm was the SGFP suction pressure low alarm which prompted the control room operator to start the third condensate pump. This action was unsuccessful in increasing the net positive suction pressure to the SGFPs. The Shift Supervisor, observing the SGFP speed increase coincident with the hotwell level less than 1 foot and feed flow less than steam flow, directed a manual trip of the reactor. The events that occurred from the time of the hotwell level alarm until the time the reactor was tripped spanned approximately 1.5 minutes.

Cause of Event

An FNP investigation has concluded that the cause of this event is personnel error in that Operations personnel inadvertently operated the local control switch and closed the AB waterbox outlet cooling water Mov during waterbox venting and seating of the outlet cooling water MOV for the AA waterbox.

Reportability Analysis and Safety Assessment

This event is reportable because of the manual actuation of the reactor protection system. After the trip, the following safety systems operated as designed:

- main feedwater was isolated by automatic closure of the flow control valves and bypass valves,
- auxiliary feedwater pumps started automatically and provided flow to the steam generators,
- source range nuclear detectors energized automatically, and
- pressurizer heaters and spray valves operated automatically as required to maintain system pressure.

There was no effect on the health and safety of the public.

Corrective Action

A root cause investigative team held an event critique immediately following the event.

Troubleshooting was performed on the AB waterbox isolation MOV to determine if the valve had closed spuriously. No problems were identified that would support that conclusion.

To prevent recurrence, condenser inlet and outlet cooling water MOVs will normally be deenergized during power operations. As a further enhancement, condenser waterbox push button local control station labeling will be upgraded and procedure FNP-1/2-SOP-26.0 will be revised to verify flow to all waterboxes prior to isolating one for testing/maintenance.

These corrective actions will be completed by December 31, 1992.

Additional Information

The unit returned to power operation at 1813 on 10-21-92

This event would not have been more severe if it had occurred under different operating conditions.

No similar LERs have been submitted by Farley Nuclear Plant.

Southern Nuclear Operating Company
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J. D. Woodard Southern Nuclear Operating Company
Vice President
Farley Project the southern electric system

November 19, 1992

Docket No. 50-364

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Joseph M. Farley Nuclear Plant - Unit 2
Licensee Event Report No. LER 92-010-00

Gentlemen:

Joseph M. Farley Nuclear Plant, Unit 2, Licensee Event Report No. 92-010-00 is being submitted in accordance with 10 CFR 50.73.

If you have any questions, please advise.

Respectfully submitted,

J. D. Woodard

JDW/EFB:map

Enclosure

cc: Mr. S. D. Ebneter
Mr. G. F. Maxwell

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